ON SCENE

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THE NATIONAL MARITIME SAR REVIEW

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A CRITICISM

Recent correspondance to the Commandant from a yachtsman contained the following criticism:

> "Another procedural improvement would be to instruct stations to dispatch a cutter to assist in cases of real emergency before filling out all of the paper work showing names of all persons on board, phone numbers, addresses and the like. During real rescues when communications were marginal, I have heard this procedure run on for twenty minutes or more before there appeared to be any effort to dispatch a rescue vessel. Again, it is doubtless a question of training."

Attention is called to paragraph 713 of the National SAR Manual, the pertinent part of which is, in light of the criticism:

> "All SAR personnel who are in a position to receive reports of emergencies must be cautioned not to delay action in order to obtain nonessential information. For almost all emergency situations, action can be started as soon as the nature and general position of the emergency is known. Remaining information which might be helpful to the resolution of the mission should be obtained after initial actions have been started. Communications should be maintained with a craft or person reporting an emergency situation and they should be kept advised of the action being taken."

ON SCENE is a SAR publication published by the Commandant, U. S. Coast Guard as a source of information concerning current and proposed procedures as well as new developments in SAR. Articles contained herein are non-record and non-directive.

Hats Off To
17th COAST GUARD DISTRICT
the
ALASKAN AIR COMMAND
the
CANADIAN SAR SERVICES, BRITISH COLUMBIA
and the
TANK VESSEL WILLIAMSBURG

The Search and Rescue forces in the Northeast Pacific area performed what may be the most outstanding rescue-at-sea in history, during October 1980.

At 0100 on Saturday the 4th of October 1980, a distress call was sent by the motor vessel PRINSENDAM, stating that her engine room was on fire, had been flooded with carbon dioxide, and that there were 329 passengers and 190 crew members onboard. The PRINSENDAM was a 427 foot luxury liner worth approximately 50 million dollars. Owned by Holland America Lines she was on an extensive cruise from Vancouver, B.C. up the inside passage of Southeast Alaska to Ketchikan and Glacier Bay. From there PRINSENDAM was to have traveled to Japan, China, and the Republic of Singapore. The distress position of the PRINSENDAM was approximately 330 miles southeast of Valdez, Alaska. The initial distress call alerted the Northern Pacific SAR Coordinator (Commander Seventeenth Coast Guard District) in Juneau, Alaska whose RCC began to execute a response. Within forty minutes the following units were activated and responding: Coast Guard Cutter BOUTWELL which departed from Juneau; Coast Guard Cutter WOODRUSH which departed from Sitka; Coast Guard Cutter MELLON which was diverted to the scene from another mission; Coast Guard Air Station Sitka which provided two H-3 helicopters; Coast Guard Air Station Kodiak which provided two H-3 helicopters and two HC-130 fixed wing aircraft; RCC Victoria which provided two Canadian CH-46 helicopters, two Canadian Buffalo aircraft, and one Argus fixed wing aircraft; Elemendorf Air Force Base which provided one H-3 helicopter and one HC-130 refueler; and RCC Kodiak, which provided additional communications support.

Thirteen aircraft, rotary and fixed wing, three Coast Guard cutters and three commercial vessels become involved by mission completion. One of the most important commercial vessels involved was the tank vessel WILLIAMSBURGH.

The WILLIAMSBURGH is a 1000 ft. supertanker. At the time of the distress she was laden with Alaskan crude oil, obtained from the port of Valdez. Approximately 5 hours away from the scene, the WILLIAMSBURGH proceeded at 17 knots. Upon arrival the ship served as a staging platform from which the helicopters executed many rescues.

By 0400 a Kodiak based C-130 was on scene and began giving a continuous flow of information

concerning the case. The engine room fire had spread forward and upward, reaching the dining room by 0512. With the spreading came the elimination of all power, water pressure and consequently fire fighting capabilities. The crew and passengers of the PRINSENDAM executed a safe and orderly departure commencing at 0512.

Remarkably, not one casualty or major injury was reported, though one covered motor launch and several life-rafts got hung up in the ships rigging. A 50 man firefighting crew remained on board the PRINSENDAM and continued fighting the fire with personnel and firefighting equipment lowered to her decks from a Coast Guard H-3 helicopter. The party remained on board until 1345 when the Coast Guard Cutter BOUTWELL arrived on scene. Upon request the BOUTWELL removed the party.

Hoisting operations progressed with 8-12 survivors being taken aboard each helicopter for delivery to the tanker WILLIAMSBURGH or the Cutter BOUTWELL.

Additional transfer of survivors took place via a small boat from the BOUTWELL. By 1816 all survivors were belived to be accounted for whether on board the BOUTWELL or the WILLIAMSBURH or in the town of Sitka where some had been airlifted during the operation. At this time two other commercial vessels which had responded to the distress call, the motor vessels PORTLAND, and SOHIO INTREPID were released from the case and the WILLIAMSBURGH proceeded to Valdez to offload survivors.

A review of the resources used during the case revealed that two U.S. Air Force pararescuemen were unaccounted for. Known to have been lowered into a lifeboat containing 18-20 survivors at 1545 they could not be located on the WILLIAMSBURGH, BOUTWELL, nor at Sitka. The BOUTWELL began searching for the lifeboat. At 0100 5 October, the missing lifeboat was found with the two pararescuemen and 18 survivors onboard. All were in excellent condition considering the circumstances, and were taken on board for the trip to Sitka.

During the 5th of October the Cutters MELLON and WOODRUSH checked out, and marked or sank, all life boats and rafts deployed during the mission to ensure accountability.

The ocean-going tug COMMODORE STRAITS was dispatched from Vancouver to tow the PRINSENDAM to Portland, Oregon. At 1115 on 7 October a 9-man team was put on board the PRINSENDAM to rig her for towing and to assess the damage. The PRINSENDAM was taken in tow at 1430. By the 9th of October the bridge area had burned to the point of total collapse in certain areas. By 1030 on 10 October the PRINSENDAM could no longer be towed straight ahead. By first light on 11 October the ship was listing 40-45 degrees. At 0830 the PRINSENDAM rolled on her starboard side and sank in 1,473 fathoms of water.

We're All in the Same Boat!

Suggestion Savings Benefit Everyone

EPIRBS ARE STILL SAVING PEOPLE

The following incident reveals the continuing effectiveness of the Emergency Position Indicating Radio Beacons for the rescue of persons at sea. On 15 April 1981 commercial aircraft reported hearing EPIRB signals between San Juan, Puerto Rico and Grand Turk Island. An HC-130 aircraft from Coast Guard Air Station Clearwater determined that the signal was coming from an area 170 miles East-South-East of Grand Turk but was unable to locate the source due to equipment failure. An HH-3 helicopter from Air Station, Borinquen homed on the signal and located the debris from the Canadian registered sailing vessel CANADIAN GOOSE . Two adults and three children in life preservers were found clinging to the wreckage. The helicopter hoisted the five people from the water and transported them to Puerto Rico. The survivors indicated that their 40 foot catamaran broke up and sank at 0400 on the 15th. They had clung to the wreckage until recovered at 2300 that night.

The helicopter pilot reported that he began climbing to 3000 feet approximately 50 nautical miles from the estimated position. A strong lock-on on 121.5 MHZ was obtained. A very weak signal was heard on 243 MHZ. The helicopter homed for about 12 minutes until a needle swing indicated that the helicopter had flown over the position. It then began descending in 500 foot increments to insure that direction finder contact was not lost. With a strong needle swing at 1000 feet MSL, a 45 minute smoke float was deployed. Another was deployed at 500 feet. The helo crew began visual search at 300 ft with night sun and search lights. After approximately five minutes of search, debris and survivors were located. A third float was deployed, effectively marking both sides and the up-wind end of the vessel debris. Hoist operations were commenced and all five persons were rescued.

...SO ARE ELTS

On 23 April 1981 a Cessna 206 Aircraft ditched in position 23-05N 154-10W , northeast of Hawaii, due to engine failure. RCC Honolulu dispatched aircraft to assist. While the aircraft were engaged in searching, a commercial aircraft reported an ELT an 121.5 MHz. One of the aircraft commenced aural location procedures and sighted possible flares but was unable to locate the source of the signal. Another aircraft was sent to resume the search and, having estimated the position by the ELT transmission during the hours of darkness, sighted the survivor in a life raft. The motor-vessel AMERICAN TRADER was diverted and picked up the pilot who was in good condition. The entire operation was completed within fifteen hours.

ASSISTANCE TO JET AIRLINERS IN THE SEA

By R. J. O'Leary, WO1, USCG, Ret.

Editor's Note: Bob O' Leary, knows whereof he speaks. I first met him at CG Air Station Brooklyn in the late 1940's. He was then a Chief Aviation Ordinanceman and a kingpin in the station's ditching and survival course being given to airline personnel. He became a Warrant Officer before retiring to go work with United Airlines and put his survival expertise to work for them. Since retiring from the regular Coast Guard he has been very active in the Auxiliary, so his Coast Guard ties continue to be strong. Needless to say I was delighted to receive this article from him.

A lot was written about the ditching of airliners in the years following WWII, the culmination of this activity being CG 306 - "Aircraft Emergency Procedures Overwater". In 1959 turbo-jet intercontinental airliners made their debut. Propeller problems had been one of the chief causes of water entries prior to that. Pure jets have no props. In the twenty plus years of jet over-ocean flying, there has not been a single deliberate ditching of a U.S. built jet airliner operated by a scheduled airline. However, during this period there have been several cases of jetliners executing unintended water landings on or near the airport's boundaries. As coxswain of a SAR surface unit, what should you expect to see when you arrive on scene, what actions will have been taken by the aircrew, what should you do or not do?

The action required by you will be determined by the condition and, to some extent, the type of airplane.

While there are many variables, an airliner in the sea will most likely fall into one of the following general conditions/situations.

CONDITION 1

Airplane is fully intact, floating and has rafts or slide/rafts.

CONDITION 1a

Same as 1 above, but no rafts or slide/rafts.

CONDITION 2

Airplane is damaged, but afloat. Airplane has rafts or slide/rafts. Fuselage has broken in two in front of or aft of wing.

CONDITION 2a

Same as 2 above, but no rafts or slide/rafts.

CONDITION 3

Same as any condition above, but is sinking quickly or has sunk.

CONDITION 4

Airplane has made high speed, high angle of entry into sea. Complete destruction of airframe, no survivors likely.

CASE HISTORIES

Let's explore actual cases based on above conditions and see what you could expect and accomplish:

CONDITION 1

Situation: A DC-8 in San Francisco Bay close to the airport. Airplane made unintentional wheels down landing in glassy water in near zero visibility in daytime. Action by aircrew;

a. Opened front door exits and

over wing exits. Launched, inflated and boarded rafts. No injuries. Very smooth landing. Some passengers did not know airplane had landed in Bay.

Action by surface craft;

a. Some civilian power boats on scene almost immediately.

b. CG surface SAR resources on scene within 15 to 40 minutes. By this time, most rafts had been towed to a nearby marina.

c. Initially RCC officials were concerned about a major fuel spill from the DC-8 (actual amount of fuel spilled was less than a gallon).

d. Airplane was now resting on it's landing gear which was on the bottom of the bay.

An important point is that jet airliners are big. Often the waters they crash land into are not deep enough to submerge the airplane. Accordingly, survivors without rafts should stay on the wing or fuselage top.

CONDITION 1a

I cannot find an example of this, but basically survivors would be evacuated out onto wing by aircrew. The crew would attach escape "ropes" from each overwing exit window to fittings on the wing top. Survivors would sit on wing and cling to this rope. They would have taken their buoyant seat cushion with them to use as a type IV PFD if airplane sinks before rescue.

If airplane is a four engine jet, flotation time is measured in hours. Smaller wing airplanes (two and three engined jets) probably won't float as long. All jets, unless uniquely damaged, float tail low at an approximately 3-5 degrees nose high attitude. In most cases, all normal passenger boarding doors are above the waterline. Incidentally, for quick location by crash/rescue crews all exits have a 2" band of contrasting paint around the exit on the outside. In the case of a Super DC-8, you would note up to six such marked exits on one side.

CONDITION 2

Situation: DC-8 in Santa Monica Bay, fuselage has broken in two aft of wing. Night time, offshore in heavy wind and rain. Action by aircrew: Limited due to majority of crew being disabled by injuries. Aft fuselage sank in four to seven minutes.

Some rafts were launched out overwing exits and windows onto wing. Some rafts were torn and deflated when they came in contact with the shattered nose radome. Remainder of survivors stayed on wing in rafts until pickup by boats.

Action by surface SAR units:

a. Arrived on scene some time after incident due to confusion ashore as to location. They evacuated survivors off wing and from rafts and transported them ashore.

b. A major fuel spill occurred. The foreign liferafts were made of a coated fabric that turned into a gelatin-like mess when it was soaked in the kerosene-like fuel. Note: Fire, while common in a land crash is almost unheard of in a water landing. Still there is always a first time. Be smart about not igniting fuel spills with illumination flares etc.

c. A small trawler-like vessel towed the wreckage a considerable distance towards shallow water. The towline seemed to be secured to the left main landing gear. The nose gear strut had torn off in the crash.

d. The wreckage floated nearly half a day.

CONDITION 2a

Situation: A 727 in Pensacola Bay. Airplane unitentionally let down into water with wheels down. Considerable damage to fuselage. Center line

engine ripped out opening up back of cabin to bay. Airplane started sinking until it rested on bottom of bay. Night time, low visibility.

Action by aircrew: Opened exits and assisted passengers out into bay or on top of wing. Some survivors had to swim under water to exit through overwing exits. Survivors had life vests, not buoyant cushions. No rafts were required to be aboard. Survivors climbed on top of fuselage and wing.

Action by surface SAR units:

a. A skillful tug boat skipper witnessing the accident maneuvered his vessel and the barge he was towing along side. Survivors were transferred to this vessel. There were surprisingly few fatalaties.

CONDITION 3

I do not have a case history for this classification, but some factors that could be encountered would be:

a. Forty percent of our population cannot swim a stroke.

b. We are well aware of the effects of hypothermia.

c. The survivors would be afloat in the sea using buoyant seat cushions or improvised flotation. Note: The aircrew will have attempted to inflate and detach the inflatable escape slides used for evacuation in a land crash.

Action by surface SAR units:

a. There's the agonizing recognition that you cannot save them all. Remember there could be hundreds of live survivors in the water. They could sink your boat. Consider jettisioning anything that will float for survivors to cling to. While your first instinct might be to rush to shore to come back for a second load of survivors, ask yourself how easy will it be for vessels enroute to locate the scene if you leave? Incidentally, sinking large airplanes do not have a tendency to "suck people down with them", such as could occur with a large surface vessel. Survivors should stay on the airplane until it sinks out from under them if they do not have flotation gear. It still might rest on the bottom, but be exposed above surface.

b. When approaching any water crash be extremely careful about running down survivors in the sea.

CONDITION 4

Situation: A 727 has entered the water out of control at a high angle of entry. Airframe is completely destroyed. No survivors likely.

Action by surface SAR unit:

a. When convinced by debris, oil slick etc. that you are on scene, attempt to buoy spot. National Transportation Safety Board Officials will be most interested in any floating wreckage you can recover. This may aid in determining "probable cause" of the accident.

b. Do not automatically assume no survivors. Anything is possible. Look around.

PASSENGER LOADS AND SURVIVAL GEAR BY AIRPLANE TYPES

How many survivors could you encounter and in what type of craft would they be afloat?

727,707,DC-8, etc.

Rafts: Four to ten 25 to 42 person "double doughnut" rafts.

Passenger load: 135 to 185.

DC-10, L-1011, etc.

Rafts: Up to eight large rectangular slide/rafts, capacity up to 60 plus each. Passenger load: 250 plus.

747

Rafts: Up to twenty-one 25-man "double doughnut" rafts or eight large slide/rafts.

Passenger load: Could exceed 400.

All airplanes must have buoyant seat cushions or life vests. Only intercontinental airplanes have rafts.

Jet airplanes are high off the ground. Accordingly, all are fitted with inflatable playground like "chute-the-chute" slides. These slides, while not designed as rafts can be jury rigged as such and could be encountered. Due to their narrow width compared with slide/rafts survivors would most likely be clinging to them. Not many will fit on one.

MISCELLANEOUS NOTES

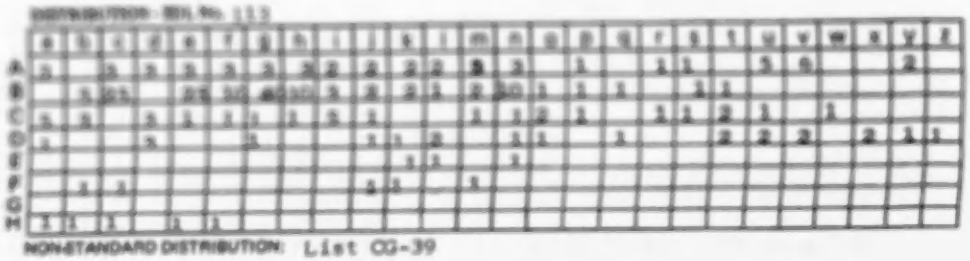
a. A floating airplane will, if intact, "weather cock" or point it's nose more or less into the wind. Consider this in planning your approach.

b. I can not think of an inshore water crash where boat crews had to open exits from the outside. Should this be required, realize that many jet liners are equipped with automatically inflating escape slides which will deploy in two to ten seconds when a door is opened from the outside (assuming the crew left the slide girt bar locked in the floor brackets).

c. A familarization visit to a local airport could provide much useful information on the structure your props or hull might strike in maneuvering alongside. Possibly airport crash/rescue crews could provide information on how to open airplane exits.

d. Rafts and slide/rafts can be towed. Connect the towline to the bridle-like grab line around the periphery of the raft and tow slowly.

e. In almost all water crashes, passengers will need medical treatment because of immersion in jet fuel coated water. While there is not much a 41 foot UTB crew could do enroute to shore, they should be on guard for difficulty in breathing experienced by survivors whose clothing is reeking with fuel. Remove clothing and perform mouth-to-mouth resuscitation as needed. Possibly flushing face and eyes with fresh water will bring some relief.



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